

REMARKS

Claims 1-74 are now pending in the application. By this paper, Claim 30 has been amended and Claims 73 and 74 have been added. The basis for this amendment and new claims can be found throughout the specification, claims, and drawings originally filed. No new matter has been added. The preceding amendment and the following remarks are believed to be fully responsive to the outstanding Office Action and are believed to place the application in condition for allowance.

The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendment and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claim 30 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Suefuji et al. (U.S. Pat. No. 6,267,572).

This rejection is respectfully traversed.

Independent Claim 30 calls for a scroll machine including an outer shell defining a first discharge pressure zone, a second discharge pressure zone, and a suction pressure zone. A first scroll compressor is disposed within the suction pressure zone of the shell and is in fluid communication with the first discharge pressure zone and a second scroll compressor is disposed within the suction pressure zone of the shell and is in fluid communication with the second discharge pressure zone. Independent Claim 30 also calls for a drive shaft that drives the first and second scroll compressors for compressing fluid disposed within the suction pressure zone and a motor disposed within the suction pressure zone between the first and second scroll compressors.

Suefuji fails to teach a first discharge pressure zone in fluid communication with a first scroll compressor and second discharge pressure zone in fluid communication with a second scroll compressor. Rather, Suefuji teaches a so-called “direct discharge” compressor, whereby compressed air is immediately discharged from the compressor to ambient once compressed.

Suefuji teaches an air compressor including a cylindrical casing (1) housing two fixed scroll members (4A, 4B) and left and right orbiting scroll members (22A, 22B). See Suefuji at Col. 2, Ins. 56-67, Col. 4, Ins. 36-46, and FIG. 1. The fixed scroll members cooperate with the orbiting scroll members to define a plurality of compression chambers (26A) therebetween. See Suefuji at Col. 5, Ins. 10-12 and FIG. 1. Suction openings (32A, 32B) are provided through the casing and are open in the outermost compression chamber “to lead outside air into the compression chamber.” See Suefuji at Col. 6, Ins. 8-12. Discharge openings (33A, 33B) open the innermost compression chamber to discharge compressed air outside of the compressor. See Suefuji at Col. 6, Ins. 15-20. The compressed air is immediately directed from the compression chambers to an area outside of the casing. In this manner, Suefuji fails to teach a first discharge pressure zone and a second discharge pressure zone disposed *within* an outer shell of a compressor.

Applicants further submit that Suefuji fails to teach a motor disposed within a suction pressure zone of a compressor shell. As described above, Suefuji teaches suction openings (32A, 32B) that “lead outside air into the compression chamber.” See Suefuji at Col. 6, Ins. 8-12. The “suction pressure zone” of Suefuji is therefore defined between the suction openings and the outermost compression chamber. An electric

motor (8) is described as being “provided in the middle of the casing between the fixed scroll members 4A and 4B.” See Suefuji at Col. 3, Ins. 12-13 and FIG. 1. In this regard, Suefuji fails to describe a motor being disposed within a *suction pressure zone* and Applicants are unable to determine a path that allows air to flow from the suction pressure zone and into an area of the casing where the motor is disposed.

Because Suefuji fails to teach a first discharge pressure zone and second discharge pressure zone, and further, because Suefuji fails to teach a motor disposed within a suction pressure zone of a compressor shell, Applicants respectfully submit that Suefuji fails to teach each and every element of the present invention. Accordingly, Applicants respectfully submit that independent Claim 30 is in condition for allowance. Therefore, reconsideration and withdrawal of the rejection is respectfully requested.

REJECTION UNDER 35 U.S.C. § 103

Claims 31-39, 40 and 41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Suefuji et al., in view of Doecker et al. (U.S. Pat. No. 6,213,731).

Claims 30, 42-49, 54-56 and 65-70 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Murayama et al. (U.S. Pat. No. 5,211,031) in view of Suefuji et al.

Claims 50-53 and 57-64 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Murayama et al., as modified by Suefuji et al., as applied to Claims 30, 55 and 57, and in further view of Doecker et al.

Claim 72 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Suefuji et al., as modified by Doecker et al., as applied to Claim 31, and in further view of Osada et al. (JP 10-037866).

These rejections are respectfully traversed.

Independent Claim 30 is believed to be in condition for allowance as Suefuji in combination with Murayama fails to teach a first and second discharge pressure zones and a motor disposed within a suction pressure zone of a compressor shell.

Murayama fails to teach a first and second discharge pressure zone and a motor disposed within a suction pressure zone. Murayama teaches a compressor (1) having a hermetic casing (2) encasing a pair of compression units (3). See Murayama at Col. 2, Ins. 61-65 and FIG. 1. A suction pipe (40) is provided for introducing suction gas and a discharge pipe (44) is provided for expelling compressed refrigerant gas from the compressor. See Murayama at Col. 4, Ins. 5-11 and 41-44. Compressed refrigerant gas is introduced to a region surrounding an electric motor to cool the electric motor prior to being delivered outside of the compressor via discharge hole (44). See Murayama at Col. 4, Ins. 55-60 and FIG. 1. In this manner, Murayama teaches a *single* discharge pressure zone and a motor disposed within a *discharge* pressure zone.

Because Suefuji does not disclose a first discharge pressure zone and second discharge pressure zone, and further, because Suefuji fails to teach a motor disposed within a suction pressure zone of a compressor shell, and none of the cited references cures this deficiency on Suefuji, Applicants' invention is not taught or suggested by the prior art and reconsideration and withdrawal of the rejection is respectfully requested.

In this manner, it is believed that independent Claim 30, as well as Claims 243-70, dependent therefrom, are in a condition for allowance in light of the art of record. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

Independent Claim 31 calls for a scroll machine including an outer shell defining a suction pressure zone, a first scroll compressor having a first scroll member disposed within the suction pressure zone of the shell, and a second scroll compressor having a second scroll member disposed within the suction pressure zone of the shell. In addition, independent Claim 31 recites that the second scroll member is movable between a first relationship in which sealing surfaces of the first and second scroll members are in sealing relationship to close off first fluid pockets and a second relationship wherein at least one of the sealing surfaces of the first and second scroll members are spaced apart to define a first leakage path between the first fluid pockets. A first fluid operated piston is secured to the second scroll member and applies a force to the second scroll member to move the second scroll member between the first relationship where the first scroll compressor operates at substantially full capacity and the second relationship where the first scroll compressor operates at substantially zero capacity.

Applicants disagree with the Examiner that the combination of prior art cited by the Examiner teaches Applicants' invention because none of the prior art cited by the Examiner teaches a vapor injection system for use with a plural compressor. The Examiner cites Doecker et al. as teaching vapor injection system. Applicants respectfully note that Doecker fails to specifically discuss a vapor injection system.

Even assuming arguendo that Doecker teaches a vapor injection system, Doecker does not provide some motivation or suggestion that it would be adaptable to a plural compressor arrangement. Thus, Applicants disagree with the Examiner that the combination of references cited is proper. Doecker does not even mention a plural compressor arrangement, leaving Applicants to the position that such a combination by the Examiner is improper. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the rejection.

Because Suefuji does not disclose a vapor injection system for use with a plural compressor, and none of the cited references cures this deficiency on Suefuji, Applicants' invention is not taught or suggested by the prior art and reconsideration and withdrawal of the rejection is respectfully requested.

In this manner, it is believed that independent Claim 31, as well as Claims 32-41 and 72, dependent therefrom, are in a condition for allowance in light of the art of record. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

ALLOWABLE SUBJECT MATTER

Applicants acknowledge the allowance of Claims 1-29 and 71.

NEW CLAIMS

Claims 73 and 74 are added for consideration.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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